

Amendment and Response

Applicant: Judith Maget et al.

Serial No.: 10/574,151

Filed: February 6, 2007

Docket No.: 1432.132.101/P32281

Title: INJECTION-LOCKED OSCILLATOR CIRCUIT

REMARKS

The following remarks are made in response to the Non-Final Office Action mailed October 7, 2008. Claim 26 has been cancelled. Claims 13, 14, 16-22, and 24-32 were rejected. Claims 15 and 23 have been objected to. With this Response, claims 13, 14, 21, 25, 27-32 have been amended. Claims 13-25 and 27-32 remain pending in the application and are presented for reconsideration and allowance.

In the Drawings

The Examiner objected to Figures 10-14 because they should be designed by a legend such as –Prior Art—because only that which is old is illustrated. Applicants have amended Figures 10-14 to correct this informality. Applicants have submitted Replacement Drawings. Applicants believe the figures are now in condition for allowance.

Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 13, 14, 16-18, 20-22, 25-29, and 31-32 under 35 U.S.C. § 102(e) as being anticipated by the Ravi et al. U.S. Patent No. 6,850,122. Applicant respectfully traverses the rejection.

As amended, claim 13 is an injection-locked oscillator circuit comprising at least two oscillator stages. Each oscillator stage includes an inductance, a capacitance connected in parallel with the inductance, at least one output node, a coupling-switching element subcircuit and at least one input terminal formed by means of the control terminal of the coupling-switching element. The coupling-switching element subcircuit includes at least one coupling-switching element which is coupled in parallel with the inductance and the capacitance in such a way that in each case precisely one coupling-switching element is present serially. The oscillator stages of the injection-locked oscillator circuit are coupled by means of the coupling-switching element subcircuits and *configured such that the oscillator stages synchronize each other*. This is not taught or suggested in the art of record.

Specifically, the Ravi reference does not teach or suggest a configuration wherein oscillatory stages synchronize each other. The oscillator in Figure 9 of the Ravi reference

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consists of a master tuned oscillator, which controls two slave tuned oscillators by using a matching network. It does not teach or suggest an oscillator states of an injection-locked oscillator circuit, as in amended claim 13, which are coupled by means of coupling-switching subcircuits such that the oscillator stages synchronize each other. As such, the amended claim is not taught or suggested in the Ravi reference.

The mutual synchronisation according to amended claim 13 leads to a reduction of phase noise and a better defined zero-crossing of the clock signals. This is not the case in the Ravi reference. Quite to the contrary, for example, comparing the circuit in Figure 9 in the Ravi reference, the slave circuits therein do not synchronize each other; they are controlled by the master tuned oscillator using the matching network. As such, Figure 9 of the Ravi reference requires at least 3 oscillator circuits. The circuit according to amended claim 13 only uses two oscillator stages. This reduces the amount of space required by the oscillator circuit.

Furthermore, in the oscillator stages according to amended claim 13, only one coupling-switching element per oscillator stage is included, whereas in Figure 9 of the Ravi reference, at least 6 transistors per slave tuned oscillator are necessary, which increase the required space of the circuit. As such, the Ravi reference teaches a technically and functionally very different circuit structure compared to the present claims.

Since the Ravi reference explicitly requires the master slave structure, which controls both slave tuned oscillator using the matching network, it teaches away from the claimed injection-locked oscillator circuit in which the oscillator stages synchronize each other. Claim 13 is allowable over the art of record.

For similar reasons, amended independent claim 25 and dependent claims 14-24 and 27-32 are allowable over the cited prior art. Therefore, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 102(e) rejection to the claims, and request allowance of these claims.

Claim Rejections under 35 U.S.C. § 103

The Examiner rejected claims 19 and 30 under 35 U.S.C. § 103(a) as being unpatentable over the Ravi et al. U.S. Patent No. 6,850,122 in view of In re Stevens (101 USPQ 284 (CCPA

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1954)). The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over the Ravi et al. U.S. Patent No. 6,850,122 in view of St. Regis Paper Co. v. Bemis Co. (193 USPQ 8) and/or In re Karlson (136 USPQ 184).

Because these claims depend on claims that are allowable as discussed above, they too are in condition for allowance. Therefore, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejection to the claims, and request allowance of these claims.

Allowable Subject Matter

The Examiner objected to claims 15 and 23 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims. These claims are also allowable as they are dependent on the claims that are allowable as discussed above.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 13-25 and 27-32 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 13-25 and 27-32 are respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Paul P. Kempf at Telephone No. (612) 767-2502, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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